

- 1450.01 General
- 1450.02 References
- 1450.03 Definitions
- 1450.04 Control Monuments
- 1450.05 Alignment Monuments
- 1450.06 Property Corners
- 1450.07 Other Monuments
- 1450.08 Documentation
- 1450.09 Filing Requirements

1450.01 General

Proper monumentation is important in referencing a highway's alignment that is used to define its right of way and the department can contribute to the body of public records and minimize duplication of survey work by establishing and recording monuments that are tied to a state plane and to a standard vertical datum. In addition, the department is required by law to perpetuate existing recorded monuments. (See RCW 58.09.) Consequently, the department shall provide monuments for realignments and new highway alignments and shall perpetuate existing monuments impacted by a project.

Both the Department of Natural Resources (DNR) and the Geographic Services Branch maintain records of surveys performed and survey monuments established. New monuments are to be reported to both operations.

Existing monuments are not to be disturbed without first obtaining the DNR permits required by state law. DNR allows the temporary covering of a string of monuments under a single permit. State law requires replacement of land boundary monuments after temporary removal according to permit procedures. WSDOT control and alignment monuments may be removed without replacement if approved by the Geographic Services Branch. (Notify DNR.)

Other requirements pertaining to specific monuments are discussed below.

Figure 1450-1 summarizes the documentation requirements for new and existing monuments.

The region is responsible for obtaining all required permits before any existing monument is disturbed and for the research to locate existing monuments as required by WAC 332-120-030 as follows:

(2) *Any person, corporation, association, department, or subdivision of the state, county or municipality responsible for an activity that may cause a survey monument to be removed or destroyed shall be responsible for ensuring that the original survey point is perpetuated. It shall be the responsibility of the governmental agency or others performing construction work or other activity (including road or street resurfacing projects) to adequately search the records and the physical area of the proposed construction work or other activity for the purpose of locating and referencing any known or existing survey monuments.*

1450.02 References

"Engineers and Land Surveyors," RCW 18.43

"Surveys — Recording," RCW 58.09

"State Agency for Surveys and Maps — Fees," RCW 58.24

"Survey Monuments--Removal or Destruction," WAC 332-120

"Minimum Standards for Land Boundary Surveys and Geodetic Control Surveys and Guidelines for the Preparation of Land Descriptions," WAC 332-130

"*Manual of Instructions for the Survey of the Public Lands of the United States* 1973 BLM, U.S. Department of Interior"

1450.03 Definitions

monument, as defined for this chapter, is any physical object or structure which marks or references a survey point. This includes a point of curvature (P.C.), a point of tangency (P.T.), a property corner, a section corner, a General Land Office (GLO) survey point, a Bureau of Land

Management (BLM) survey point, and any other permanent reference set by a governmental agency or private surveyor.

removal or destruction the physical disturbance or covering of a monument such that the survey point is no longer visible or readily accessible.

1450.04 Control Monuments

Horizontal and vertical control monuments are permanent references required for the establishment of project coordinates tied to a state plane and elevations tied to a standard vertical datum. By establishing and recording permanent control monuments, the department eliminates duplication of survey work and contributes to the body of public records.

Horizontal and vertical control monuments are required for highway projects requiring the location of existing or proposed alignment or right of way limits. Monuments set by other agencies may be used if within two kilometers (1.24 miles) of the project and the required datum and accuracy were used. To omit monumentation when it is impractical, a variance must be sought from the State Survey Support Engineer.

When control monuments are required for a given project, either show the existing and proposed control monuments on the contract plans or include an approved variance in the design report.

For horizontal control:

- Use North American Datum 1983, revised 1991 (NAD83/91).
- Use a minimum of second order, Class II procedures as defined in the *Highway Surveying Manual* (M 22-97).
- Provide two monuments near the beginning of the project.
- Provide two monuments near the end of the project.
- Provide a pair of monuments at about five kilometer (or 3-mile) intervals throughout the length of the project.

For vertical control:

- Use North American Vertical Datum 1988 (NAVD88). See the *Highway Surveying Manual* for orders of accuracy required.
- Use at least third order procedures within project limits as defined in the *Highway Surveying Manual*.
- Provide vertical control throughout the length of the project. Desirable spacing is at or near each milepost or every other kilometer. Maximum spacing is five kilometers (3.11 miles) apart.

All control monuments that are established, reestablished, or reset must be filed with the county engineer and DNR. Submit a Monumentation Map that has been signed by the supervising, licensed, professional engineer, or land surveyor (or, if the monument is not used to reference right of way or land corners, submit a Record of Survey Mark).

1450.05 Alignment Monuments

Alignment monuments are permanent references required for the establishment or reestablishment of the highway and its right of way. Generally, highway and ramp center line P.C.s and P.T.s are monumented. Establishment, reestablishment, or resetting of alignment monuments is required on the following highway projects:

- New highway alignment projects.
- Highway realignment projects involving new right of way. (Monuments are only required for the realigned highway section.)
- Highway projects where alignment monuments already exist.

Before an existing alignment monument is reestablished or reset, a DNR permit is required.

All alignment monuments that are established, reestablished or reset must be filed with the appropriate county engineer and DNR. A copy of a Monumentation Map is filed with the county engineer of the county in which the monument is located and the original is sent to the Olympia Service Center Right of Way Plans Branch. The Olympia Service Center will forward a copy to DNR for their records.

1450.06 Property Corners

A new property corner monument will be provided where an existing recorded monument has been invalidated as a direct result of a right of way purchase by the department. The new property corner monument shall be set by or under the direct supervision of a licensed professional land surveyor. The licensed professional land surveyor must record the survey with the county auditor and send copies to DNR and the Olympia Service Center Right of Way Plans Branch.

1450.07 Other Monuments

A DNR permit is required before any monument may be removed or destroyed.

Existing section corners and BLM or GLO monuments impacted by a project shall be reset to perpetuate their existence. After completing the work, a Land Corner Record is required.

Other permanent monuments established by any other governmental agency must not be disturbed until the agency has been contacted to determine specific requirements for the monument. If assistance is needed to identify a monument, contact the Olympia Service Center Geographic Services Branch.

Resetting monuments must be done by or under the direct supervision of a licensed professional engineer or a licensed professional land surveyor. A copy of a Monumentation Map is filed with the county engineer of the county in which the monument is located and the original is sent to the Olympia Service Center Right of Way Plans Branch. The Olympia Service Center will forward a copy to DNR for their records.

1450.08 Documentation

The following documents are to be preserved for future reference in the project's design documents file. See Chapter 330.

- ☐ A general statement about the project's impacts on existing monuments.
- ☐ A general statement concerning new monuments.

1450.09 Filing Requirements

(1) DNR Permit

When a DNR permit is required, use the application form shown in Figure 1450-2a. The completed application must be signed by a licensed professional engineer or a licensed professional land surveyor and submitted to DNR.

Monumentation work cannot be done until DNR has approved the permit. Verbal permission may be granted by DNR pending the issuance of a written permit.

After resetting the monument, the survey method used must be filed with DNR using the completion report form shown in Figure 1450-2b. The form must be signed by a licensed professional engineer or a licensed professional land surveyor.

(2) Monumentation Map

When a Monumentation Map is required, a plan sheet is prepared. Generally, the plan sheet is based on a right of way plan obtained from the Olympia Service Center Right of Way Plans Branch. A Monumentation Map contains a description of all new and existing monuments indicating their kind, size, and location. In addition, it must contain the seal and signature of a licensed professional engineer or a licensed professional land surveyor. See the *Plans Preparation Manual*.

A copy of a Monumentation Map is filed with the county engineer of the county in which the monument is located and the original is sent to the Olympia Service Center Right of Way Plans Branch. The Olympia Service Center will forward a copy to DNR for their records.

(3) Land Corner Record

When a Land Corner Record is required, use the forms shown in Figures 1450-3a and 3b. The completed forms must be signed and stamped by a licensed professional engineer or a licensed professional land surveyor and submitted to the county auditor for the county in which the monument is located. Copies are sent to DNR and the Olympia Service Center Right of Way Plans Branch.

SET NEW

WSDOT Control Monument

Before: No permit required.

After: File a copy of a Monumentation Map with the county engineer. Send the original to the OSC R/W Plans Branch.

Alignment Monument

Before: No permits required.

After: File a copy of a Monumentation Map with the county engineer. Send the original to the OSC R/W Plans Branch.

Property Corner Monument*

Before: Engage a licensed professional land surveyor.

After: Licensed professional land surveyor files Record of Survey with county auditor and DNR and send a copy to the OSC R/W Plans Branch.

DISTURB EXISTING*

Control Monument

Before: Obtain DNR permit.

After: File a copy of a Monumentation Map with the county engineer. Send the original to the OSC R/W Plans Branch.

Alignment Monument

Before: Obtain DNR permit.

After: File a copy of a Monumentation Map with the county engineer. Send the original to the OSC R/W Plans Branch.

Section Corner, BLM, or GLO Monument

Before: Obtain DNR permit.

After: File Land Corner Record with the county auditor and DNR and send a copy to the OSC R/W Plans Branch.

All Other Monuments

Before:

- Obtain DNR permit.
- Contact governmental agency.

After: File a copy of a Monumentation Map with the county engineer. Send the original to the OSC R/W Plans Branch.

*Property corner monuments must be filed within 90 days of establishment, reestablishment, or restoration.

Monument Documentation Summary

Figure 1450-1

**APPLICATION FOR PERMIT
TO REMOVE OR DESTROY
A SURVEY MONUMENT**

PERMIT NO.

You are hereby authorized to remove or destroy
the described survey monument(s):

**AUTHORIZING SIGNATURE/DATE
(DNR or Other Authorizing Agency)**

APPLICANT INFORMATION:

NAME:

TELEPHONE NO:

DATE:

COMPANY OR AGENCY NAME AND ADDRESS:

I estimate that this work will be finished by (date) _____.

_____ I request a variance from the requirement to reference to the Washington Coordinate System. (Please
provide your justification in the space below.)

The variance request is ___ approved; ___ not approved. (FOR DNR USE ONLY) Reason for not approving:

MULTIPLE MONUMENTS:

_____ Check here if this form is being used for more than one monument. You must attach separate sheets showing
the information required below for each monument affected. You must seal, sign and date each sheet.

INDEXING INFORMATION FOR AN INDIVIDUAL MONUMENT:

- 1) THE MONUMENT IS LOCATED IN: SEC _____ TWP _____ RGE _____ 1/4-1/4 _____
2) ADDITIONAL IDENTIFIER: (e.g., BLM designation for the corner, street intersection, plat name, block, lot, etc.)

MONUMENT INFORMATION: Describe: 3) the monument/accessories found marking the position,
4) the temporary references set to remonument the position (include coordinates when applicable), and
5) the permanent monument(s) to be placed on completion (if a permanent witness monument(s) is set include the
references to the original position).

SEAL/SIGNATURE/DATE SIGNED

(Form prescribed 2/94 by the Public Land Survey Office, Dept. of Natural Resources, pursuant to RCW 58.24.040 (8).)

DNR Permit Application
Figure 1450-2a

COMPLETION REPORT FOR MONUMENT REMOVAL OR DESTRUCTION

(TO BE COMPLETED AND SENT TO THE DNR AFTER THE WORK IS DONE.)

_____ I have perpetuated the position(s) as per the detail shown on the application form.

SEAL/SIGNATURE/DATE SIGNED

OR

_____ I was unable to fulfill the plan as shown on the application form. Below is the detail of what I did do to perpetuate the original position(s). (If the application covered multiple monuments attach sheets providing the required information. Seal, sign and date each sheet.)

SEAL/SIGNATURE/DATE SIGNED

DNR Completion Report Form
Figure 1450-2b

LAND CORNER RECORD

(THIS FORM PRESCRIBED BY THE PUBLIC LAND SURVEY OFFICE, DEPARTMENT OF NATURAL RESOURCES, PURSUANT TO RCW 58.09.. ALPHA-NUMERIC INDEX DIAGRAM ON THE BACK.)

CORNER INDEXING INFORMATION:

TWP _____ RGE _____ CORNER CODE _____
(Willamette Meridian) (See instructions on back of LCR)

ADDITIONAL IDENTIFIER: (e.g., BLM designation for the corner, street intersection, plat name, block, lot, etc.)

COUNTY: _____

AUDITOR'S USE _____

LAND SURVEYOR INFORMATION: (or Public Officer as per RCW 58.09.090)

This corner record correctly represents work performed by me or under my direction in conformance with the Survey Recording Act.

COMPANY OR AGENCY: _____

ADDRESS: _____

SEAL/SIGNATURE/DATE _____

WASHINGTON PLANE COORDINATES: N: _____ E: _____

ORDER: _____ ZONE: _____ DATUM (Date of adjustment): _____

CORNER INFORMATION: Use the space below to provide the following information regarding the corner:
(1) Pertinent Corner History, (2) Evidence Found at the Corner, and (3) Corner Perpetuation Information. Please title and number the parts of your discussion accordingly. If additional space is needed use the back. (For (3), diagram the references. Also, provide the cross-reference to a map of record, if applicable, the surveyor's field book no./page no., and the date of work.) (See the back of this form for the requirements of the Survey Recording Act.)

DATE OF FORM: 2/32

Land Corner Record
Figure 1450-3a

MARK THE CORNER LOCATION ON THE DIAGRAM BELOW AND FILL IN THE CORNER CODE BLANK ON THE OTHER SIDE:

(1) For corners located at the intersection of two lines (Section corners, quarter corners and sixteenth corners):

(a) The corner code is the alpha-numeric coordinate from the diagram below that corresponds to the appropriate intersection of lines.

(2) For corners that are not located at the intersection of two lines (Meander corners, DLC's, HES's, reservation boundaries, mining claims, etc.):

(a) For corners that are on one line only the corner code is the line designation and the related line segment; i.e., a corner on line 5 between "B" and "C" is designated BC-5.

(b) For corners that are between lines the corner code is both line segments; i.e., a corner in the SE1/4 of the SE1/4 of section 18 is designated MN-4-5.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
A																									
B																									
C		6				5					4				3				2				1		
D																									
E																									
F																									
G		7				8					9				10				11				12		
H																									
J																									
K																									
L		18				17					16				15				14				13		
M																									
N																									
O																									
P		19				20					21				22				23				24		
Q																									
R																									
S																									
T		30				29					28				27				26				25		
U																									
V																									
W																									
X		31				32					33				34				35				36		
Y																									
Z																									

RCW 58.09.060 (2) requires the following information on this form: an accurate description and location, in reference to the corner position, of all monuments and accessories (a) found at the corner and (b) placed or replaced at the corner; (c) basis of bearings used to describe or locate such monuments or accessories; and (d) corollary information that may be helpful to relocate or identify the corner position.

SPACE FOR ADDITIONAL COMMENT:

Land Corner Record
Figure 1450-3b